

THE RUBBER INDUSTRY IN THE TERRITORIES OF MANICA AND SOFALA

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IN THE TERRITORIES OF
MANICA AND SOFALA**

COMPANHIA DE MOÇAMBIQUE.

THE RUBBER INDUSTRY

IN THE

TERRITORIES OF MANICA AND SOFALA

BY

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THE RUBBER INDUSTRY
IN THE
TERRITORIES OF MANICA AND SOFALA,
ADMINISTERED BY
THE MOÇAMBIQUE COMPANY.

The 60,000 square miles of country comprised in the Territories of Manica and Sofala are administered by the Moçambique Company by virtue of a Royal Charter granted by His Majesty the King of Portugal in the year 1891. It is the only Chartered Company now extant governing territory which had been under the direct administration of a European Power previous to its Charter being granted.

The Territories of Manica and Sofala are of especial interest to Great Britain in view of the large amount of British capital invested therein, and of the fact that the City of Beira, the capital, is the natural and therefore the recognised port for Rhodesia.

The boundaries of these Territories are:—The Zambesi on the North, Southern Rhodesia on the West, Inhambane on the South, and the Indian Ocean on the East.

The earliest record of rubber in published writings was made by Gonzalo Fernandès d'Ovièdo Y Valdas, in his "Histoire générale des Indes," published at Madrid in 1536. In this is mentioned the Indians' game of Batey, played with a rubber ball.

It was, however, not until 1736 that the first specimens of this substance arrived in Europe; these La Comdamine despatched under the name *caoutchouc* from Quito, the capital of Ecuador, to the Paris Academy.

Twenty-four years later, Priestly invited attention to the value of indiarubber for erasing lead-pencil marks. In 1823, Mackintosh discovered a method whereby garments could be rendered water-proof by the application of a solution of indiarubber.

Owing to the fact that raw rubber is brittle at low temperatures, and is rendered tacky by high temperature, its present extensive use in the manufactures and arts would never have been realised had it not been for the discovery of vulcanisation, which to a very large extent remedies these natural defects. The year 1839, the date of this discovery by Nelson Goodyear, may therefore be considered the birth of the rubber industry.

The exact date of the discovery of rubber-producing plants in the Moçambique Company's Territory is not known, but exports of rubber were made by Indian merchants long before the Company received its Charter.

SOURCES OF RUBBER IN MANICA AND SOFALA.

Landolphia Kirkii Dyer, until quite recently, the only indigenous plant exploited for rubber in these Territories, was first discovered by Sir John Kirk, in Zanzibar about thirty years ago, and it is considered probable that it was found and exploited in Manica and Sofala very shortly afterwards.

This plant is practically ubiquitous in these Territories. The writer has observed it growing within a few yards of the seashore and at all elevations up to 4,000 feet. Its habit is, however, profoundly altered by the different climatic and other conditions obtained in these various districts.

In the dry areas of the low country it assumes a low-growing, straggly, and at times almost shrubby habit. The leaves, flowers, and fruits which it produces in these regions being much smaller than those of plants growing at higher elevations and in regions where the rainfall is more abundant. In the latter districts, *Landolphia Kirkii* develops into an enormous vine with tappable stems often more than a hundred feet in length, its foliage being displayed in the sunlight intermingled with that of gigantic forest trees.

The stems of such vines frequently attain a diameter of 10 to 12 inches, whereas those of plants growing in the Low country rarely exceed a diameter of six inches.

The flowers are small, white, salver-shaped, and fragrant, arranged in dense corymbs; they are, however, frequently aborted into straggly tendrils.

The fruits vary in shape, even on the same plant, from spherical to pyriform, and in size from one to three inches in diameter.

The seeds are horny, angular, and, in mature fruits, covered with yellow mucilage.

The leaves are small, lanceolate, a glossy bright green above but a paler green beneath, with dense brown pubescence on the prominent mid-rib.

This latter character is also very conspicuous on the young stems, but vanishes with age when numerous small pale yellow excrescences appear.

The bark of old stems is often half-an-inch in thickness, and has a pale brown corrugated appearance on the surface.

The latex produced by this plant is white, thick, rich in caoutchouc, and it rapidly coagulates on exposure to the atmosphere.

The newly coagulated product is pure white, but changes to a pale amber colour on drying. It possesses excellent physical properties, and the following analysis, made of fair samples at the Imperial Institute, London, demonstrates both its high caoutchouc content and freedom from deleterious impurities :—

	Sample as received.	Composition of dry rubber.
Moisture	5.0	
Caoutchouc	85.6	90.1
Resin	5.5	5.7
Proteids	1.3	1.3
Insoluble	2.7	2.8
Ash	0.46	0.48

This rubber, when properly prepared, is always in good demand, and realises prices only slightly inferior to "Fine Para."

The following sources of rubber, new to these Territories, have been recently discovered by the researches of the Technical Department :—

Mascarenhasia Elastica K. Sch. var. Authorities at the Royal Botanic Gardens, Kew, who have compared botanical specimens of this plant with those of *Mascarenhasia Elastica K. Sch.* in the Kew Herbarium, state that it differs from the latter in having obtuse instead of obtusely-acuminate leaves, and also in having follicles with more or less incurved tips.

This new source of rubber is a shrubby tree varying in height from 20 to 30 feet. It produces bright, dark-green foliage, the leaves vary from three to nine inches in length, and in breadth from one to two inches.

To the casual observer its white fragrant flowers are somewhat similar in form to, though more than three times as large as, those of *Landolphia Kirkii* Dyer. They are produced in few flowered cymes situated in the axils of the leaves.

The latex produced by this tree is also white and thick and rapidly coagulates on exposure to the atmosphere. The resultant rubber, although slightly inferior in quality to that yielded by *Landolphia Kirkii*, exhibits excellent physical properties.

Investigations conducted by the Company's administrative officials show that this tree is abundant in several districts in these Territories, and steps are being taken to test its productive capacity.

Landolphia sp. near *L. Buchananii*, Stapf. Botanical specimens of a second new rubber-producing plant, which were submitted to the Royal Botanical Gardens, Kew, for identification, were found to resemble closely those of *Landolphia Buchananii*, Stapf.

The general habit of this plant resembles that of *Landolphia Kirkii*, and the quality of the rubber produced by both plants appears to be very similar.

It has not yet been ascertained to what extent this new source of rubber occurs in Manica and Sofala.

Landolphia Florida Benth. This well-known tropical liane abounds in several districts.

Widely diverse opinions have been expressed in regard to the economic value of this plant. Extensive researches, conducted by the writer in West Africa, completely failed to produce a substance of commercial value from its latex. It is, therefore, somewhat surprising that latex collected from lianes of this species growing in Manica and Sofala, and treated by one of the processes, i.e., ebullition, which in West Africa failed to give satisfactory results, has yielded what it is expected will prove a marketable commodity.

The physical properties of this product are poor, and a chemical examination will probably show a low caoutchouc content. Still, it is considered that it compares favourably with several medium grade rubbers which find a profitable market.

Ficus Vogetii, Mig: is usually a huge epiphyte. It is closely allied and similar in habit to the Indian rubber tree, which yields the product known in commerce as "Rambong Rubber."

Samples of rubber, collected by the writer from this tree in West Africa, had poor physical properties, being lacking in resiliency and tenacity. On examination at the Imperial Institute they were found to contain 44 per cent. of resinous matter and only about 51 per cent. of caoutchouc.

As this tree is fairly abundant in Manica and Sofala, and yields a large amount of latex, it is quite possible that it might be profitably exploited, as the samples of rubber previously referred to were valued by London brokers at 2s. per lb.

Diplorhynchus Mossambicensis, Benth: is one of the commonest plants in these territories. It forms a small sturdy tree which, on being tapped, yields a large amount of latex.

A guttapercha-like substance has been obtained from the latex by ebullition; but its commercial value has not yet been ascertained.